



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/813,955	03/22/2001	Stephane Berche	0142-0353P-SP	2838
2292 7590 01/25/2007 BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			EXAMINER KIM, CHONG R	
			ART UNIT 2624	PAPER NUMBER
SHORTENED STATUTORY PERIOD OF RESPONSE			NOTIFICATION DATE	
3 MONTHS			01/25/2007	
			DELIVERY MODE ELECTRONIC	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Notice of this Office communication was sent electronically on the above-indicated "Notification Date" and has a shortened statutory period for reply of 3 MONTHS from 01/25/2007.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary

Application No.

09/813,955

Applicant(s)

BERCHE ET AL.

Examiner

Charles Kim

Art Unit

2624

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 December 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11, 13-19 and 22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11, 13-19 and 22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on October 5, 2006 has been entered.

Response to Amendment and Arguments

2. Applicant's amendment filed on October 5, 2006 has been entered and made of record.
3. Applicant's arguments have been fully considered, but they are not deemed to be persuasive for at least the following reasons.

Applicants argue (page 8) that their claimed invention (claim 22) differs from the prior art because "Satoshi does not use the filled out forms in the Leaning Form operation since that would complicate or render inoperative Satoshi's Leaning Form operation and even the subsequent comparison and matching operation." The examiner disagrees.

First, applicant's arguments with respect to the "Leaning Form operation" appears to be referring the form learning operation in Satoshi. Second, it is clear from Satoshi's teachings that the forms used during the learning process can be filled out--can include character strings. For example, Satoshi explains that there are two modes of specifying the position of the management information for the form learning process shown in figure 6 (page 12, lines 56-57). The first

Art Unit: 2624

mode is the user entry mode, which requires the user to “directly specify the position of management information from among a number of rectangular cells forming a table” (page 12, line 57-page 13, line 6). The second mode is the automatic learning mode, which extracts management information using title extracting technology described in Satoshi’s “former application 08/694,503” (page 13, lines 7-13). For both modes, the candidates for management information from an input image are extracted in the “intra-table title extracting process” (page 13, lines 19-22). The intra-table title extracting process, as illustrated in figure 24, starts by scanning the input document and extracting large rectangles (page 13, lines 23-29). Then, table rectangles are extracted from the extracted large rectangles and a rectangle containing management information is selected from the table rectangles (page 13, lines 26-29).

Subsequently, “**a character string is extracted from the selected table rectangle**, a rectangle circumscribing a character string (character string rectangle) is obtained, and its coordinates are stored in the memory” (page 13, lines 30-31).

In addition, Satoshi explains that the extracted management information can be stored in a number of ways. For instance, the management information can be stored using character codes (S107), images (S108), or character codes and images (S106) [See figure 26]. When the management information is stored using character codes, the characters in the extracted character string (described above) are recognized in the character recognition step (S104) and stored as management information [page 15, lines 2-5 and figure 26].

From the above, it is clear that the forms used during the form learning process in Satoshi include character strings. Also, Satoshi explains that the character strings in these forms are recognized by a character recognition process and stored as management information.

Art Unit: 2624

Therefore, contrary to applicant's contention, Satoshi can and does use filled-out forms, i.e., forms including character strings, during the form learning operation.

Applicant's arguments with respect to claims 1 and 11 have been considered but are moot in view of a new grounds of rejection, the details of which are provided below.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 2 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Referring to claim 2, the phrase "wherein said designation step" renders the claim indefinite because it is unclear whether the designation step is referring to line 4 or line 11 of claim 1. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 2, 6-11, 13-16, 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Satoshi et al., E.P. Patent No. 0851382 ("Satoshi") and Syeda-Mahmood et al., U.S. Patent No. 6,621,941 ("Syeda").

Referring to claim 1, Satoshi discloses a method of recognizing documents in a system having a scanner connected to a computer, the method comprising:

- a. scanning a document (page 6, lines 10-12 and page 7, lines 6-7);
- b. using a pointing device to designate an arbitrary point P in at least one box of the scanned document (page 6, lines 12-13 and page 7, lines 45-48);
- c. recognizing the characters in the box of the scanned document (step 104 in figure 26);
- d. storing the recognized characters in a first database (step 107 in figure 26);
- e. storing, in a second database connected to the computer to store characterization data of the box of the scanned document such that another box subsequently can be identified automatically by the first software without any point P within another box being designated, for next documents of the same type (page 6, lines 20-23, page 7, lines 45-48 and figure 8).

Satoshi does not explicitly disclose that the stored recognized characters enable documents scanned in this way to be indexed. However, this feature was exceedingly well known in the art. For example, Syeda discloses the steps of recognizing characters in an identified (title) box of a document and storing the recognized characters to enable scanned images to be indexed (col. 9, lines 9-33 and col. 15, line 60-col. 16, line 38).

Satoshi and Syeda are combinable because they are both concerned with document recognition/indexing methods. At the time of the invention, it would have been obvious to a

Art Unit: 2624

person of ordinary skill in the art to modify Satoshi's method so that the characters in the title box are recognized and used to index the document, as taught by Syeda. The suggestion/motivation for doing so would have been to enhance the efficiency of the document indexing process by facilitating the storage of the documents (Syeda, col. 2, lines 46-63). Therefore, it would have been obvious to combine Satoshi with Syeda to obtain the invention as specified in claim 1.

The examiner notes that neither Satoshi nor Syeda explicitly disclose OCR character recognition. However, Official Notice is taken that OCR character recognition was exceedingly well known in the art and commonly used to recognize characters for the type of documents disclosed in Satoshi and Syeda. At the time of the invention, it would have been obvious to modify the recognizing step in Satoshi and Syeda so that the characters are recognized by OCR. The suggestion/motivation for doing so would have been to enhance the flexibility and improve the accuracy of the character recognition process.

Referring to claim 2 as best understood, Satoshi further discloses searching for and identifying the box of the document which contains the point P designated by a user (page 7, lines 45-48).

Referring to claim 6, Satoshi further discloses that the OCR step is preceded by a step in which the user defines the type of character to be recognized in the box document (page 6, lines 3-4).

Referring to claim 7, Satoshi and Syeda do not explicitly disclose that the scanning step is performed initially for a set of documents to be processed, with the steps of identifying the box and performing OCR being performed subsequently. Instead, the combination of Satoshi and

Art Unit: 2624

Syeda disclose that the steps of scanning the document, identifying the box, and performing character recognition are applied in sequence to the each of the documents to be processed (Satoshi, figures 4 and 26). Note that the essential differences between the two processes is that one process scans the entire document set initially (and then identifies the box and performs character recognition), while the other process scans each document individually (and then identifies the box and performs character recognition for each document). The Examiner notes that these two differences are not considered to be patentable because the specific scanning process (scanning the entire document set or scanning the documents individually) would have been chosen by the user during experimentation to meet his/her specific requirements.

Therefore, at the time of the invention, it would have been obvious to a person of ordinary skill in the art to perform the scanning step initially for the set of documents to be processed, with the steps of identifying the box and performing character recognition being performed subsequently; since no new or unexpected results are seen to be attained by performing the scanning step initially for the set of documents rather than performing the scanning step individually for each document.

Referring to claim 8, Satoshi further discloses that the scanning step is initially performed for a first document, with the steps of identifying the box and performing character recognition subsequently being performed on that document so as to define a sequence, with the sequence then being repeated in succession for each of the documents to be processed (page 6, lines 20-23, figures 6, 24, and 26).

Referring to claim 9, Satoshi does not explicitly disclose that the documents to be recognized and indexed are a set of technical drawings of the same or different types.

Syeda discloses documents to be recognized and indexed that are a set of technical drawings of the different types (figure 8).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the document of Satoshi so that it comprises a set of technical drawings as taught by Syeda. The suggestion/motivation for doing so would have been to increase the flexibility of the system by enabling it to recognize and index a variety of different types of documents. Therefore, it would have been obvious to combine Satoshi with Syeda to obtain the invention as specified in claim 9.

Referring to claim 10, Satoshi further discloses that the documents to be recognized and indexed are a set of forms of different types (figure 23).

Referring to claim 11, Satoshi discloses an apparatus for recognizing and indexing documents, the apparatus comprising:

- a. a scanner for scanning a document and delivering an image of the document (page 6, lines 10-12 and page 7, lines 6-7);
- b. a computer connected to the scanner to receive the scanned image (page 6, line 43-page 7, line 7 and figure 5);
- c. a first database connected to the computer for storing the scanned image (figure 5);
- d. a first software for using a pointing device to designate an arbitrary point P in at least one box of the image, for searching for and identifying the box containing the point P designated by a user (page 6, lines 12-13 and page 7, lines 45-48), for recognizing the characters in the box (step 104 in figure 26), and for storing the recognized characters (figure 26);

e. a second database connected to the computer to store characterization data such that the box subsequently can be identified automatically by the first software without any point P within the box being designated (page 6, lines 20-23, page 7, lines 45-48 and figure 8).

Satoshi does not explicitly disclose that the stored recognized characters enable documents scanned in this way to be indexed. However, this feature was exceedingly well known in the art. For example, Syeda discloses the steps of recognizing characters in an identified (title) box of a document and storing the recognized characters to enable scanned images to be indexed (col. 9, lines 9-33 and col. 15, line 60-col. 16, line 38).

Satoshi and Syeda are combinable because they are both concerned with document recognition/indexing methods. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify Satoshi's method so that the characters in the title box are recognized and used to index the document, as taught by Syeda. The suggestion/motivation for doing so would have been to enhance the efficiency of the document indexing process by facilitating the storage of the documents (Syeda, col. 2, lines 46-63). Therefore, it would have been obvious to combine Satoshi with Syeda to obtain the invention as specified in claim 11.

The examiner notes that neither Satoshi nor Syeda explicitly disclose OCR character recognition. However, Official Notice is taken that OCR character recognition was exceedingly well known in the art and commonly used to recognize characters for the type of documents disclosed in Satoshi and Syeda. At the time of the invention, it would have been obvious to modify the recognizing step in Satoshi and Syeda so that the characters are recognized by OCR.

Art Unit: 2624

The suggestion/motivation for doing so would have been to enhance the flexibility and improve the accuracy of the character recognition process.

Referring to claim 13, see the rejection of at least claim 6 above.

Referring to claim 14, Satoshi further discloses that the first and second databases are integrated in a memory of the computer (figure 5).

Referring to claim 15, Satoshi further discloses that the pointing device is a finger of the user (page 7, lines 45-48).

Referring to claim 16, see the rejection of at least claim 11 above.

Referring to claim 22, Satoshi discloses a method of recognizing and indexing documents in a system having a scanner connected to a computer, the method comprising:

- a. scanning a document (page 6, lines 10-12 and page 7, lines 6-7);
- b. manually designating an arbitrary point P in a predetermined area of the scanned document; if a type of the scanned document is not known (page 6, lines 12-13 and page 7, lines 45-48);
- c. identifying a box around the arbitrary point P of the scanned document (col. 6, lines 14-19, page 7, lines 45-48 and figure 8);
- d. storing, in a database connected to the computer, characterization data of the identified box of the scanned document, such that boxes in next documents of a same type can be identified automatically without designation of an arbitrary point P on next documents (page 6, lines 20-23, page 7, lines 45-48 and figure 8);
- e. recognizing the characters in the box of the scanned document (step 104 in figure 26).

Satoshi does not explicitly disclose that the stored recognized characters enable documents scanned in this way to be indexed. However, this feature was exceedingly well known in the art. For example, Syeda discloses the steps of recognizing characters in an identified (title) box of a document and storing the recognized characters to enable scanned images to be indexed (col. 9, lines 9-33 and col. 15, line 60-col. 16, line 38).

Satoshi and Syeda are combinable because they are both concerned with document recognition/indexing methods. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify Satoshi's method so that the characters in the title box are recognized and used to index the document, as taught by Syeda. The suggestion/motivation for doing so would have been to enhance the efficiency of the document indexing process by facilitating the storage of the documents (Syeda, col. 2, lines 46-63). Therefore, it would have been obvious to combine Satoshi with Syeda to obtain the invention as specified in claim 22.

6. Claims 3-4, 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Satoshi et al., E.P. Patent No. 0851382 ("Satoshi"), Syeda-Mahmood et al., U.S. Patent No. 6,621,941 ("Syeda"), and Takahashi et al., U.S. Patent No. 5,966,473 ("Takahashi").

Referring to claim 3, Satoshi and Syeda do not explicitly disclose the step of applying a shape search algorithm. However, this feature was exceedingly well known in the art. For example, Takahashi discloses a step of applying a shape search algorithm over a determined search zone surrounding a point P as previously designated by a user (col. 6, line 20-col. 7, line 59 and figure 6).

Satoshi, Syeda, and Takahashi are combinable because they are all concerned with image processing methods for document recognition. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the method of Satoshi and Syeda to include the teachings of Takahashi. The suggestion/motivation for doing so would have been to enhance the flexibility of the document processing system.

Referring to claim 4, Takahashi further discloses that the shape search algorithm is a projection algorithm which counts the number of pixels present in each vertical or horizontal line of the determined search zone and which, on the basis of these count numbers, finds the horizontal and vertical lines present in the search zone by examining the peaks in the X and Y projection profiles (figure 6).

Referring to claim 17, see the rejection of at least claim 3 above.

Referring to claims 18 and 19, see the rejection of at least claim 4 above.

7. Claims 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Satoshi et al., E.P. Patent No. 0851382 ("Satoshi"), Syeda-Mahmood et al., U.S. Patent No. 6,621,941 ("Syeda"), and Takahashi et al., U.S. Patent No. 5,966,473 ("Takahashi"), further in view of Saitoh, U.S. Patent no. 5,220,621 ("Saitoh").

Referring to claim 5, Satoshi, Syeda, and Takahashi do not explicitly disclose that the shape searching algorithm is an algorithm based on the Hough transform. However, this feature was exceedingly well known in the art. For example, Saitoh discloses a shape searching algorithm that is based on the Hough transform (col. 2, lines 3-7).

Art Unit: 2624

Satoshi, Syeda, Takahashi and Saitoh are combinable because they are all concerned with image processing methods for document recognition. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the shape searching algorithm of Satoshi, Syeda, and Takahashi so that it is based on the Hough transform, as taught by Saitoh. The suggestion/motivation for doing so would have been to provide the capability of extracting graphics of any shape, thereby enhancing the document recognition process (Saitoh, col. 2, lines 3-15). Therefore, it would have been obvious to combine Satoshi, Syeda, Takahashi with Saitoh to obtain the invention as specified in claim 5.

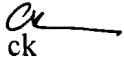
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles Kim whose telephone number is 571-272-7421. The examiner can normally be reached on Mon thru Thurs 8:30am to 6pm and alternating Fri 9:30am to 6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on 571-272-7453. The fax phone number for the organization where this application or proceeding is assigned is 571-272-8300.

Art Unit: 2624

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


ck

January 20, 2007


ISHRAT SHERALI
PRIMARY PATENT EXAMINER